UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/753,279	12/30/2000	Gregory Hibdon	42390P9571	1479

7590	01/16/2004

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER
YIGDALL, MICHAEL J

ART UNIT	PAPER NUMBER
2122	

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Application No.
09/753,279

Applicant(s)
HIBDON, GREGORY

Examiner
Michael J. Yigdall

Art Unit
2122

Office Action Summary

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _30 December 2000_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-24_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-24_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _30 December 2000_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:
　　　1.☐ Certified copies of the priority documents have been received.
　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.
　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

　　a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

4)☐ Interview Summary (PTO-413) Paper No(s). _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-24 are pending and have been examined. The priority date considered for the
application is 30 December 2000.

Drawings

2.   The drawings are objected to because the label for Fig. 8 is written by hand. A proposed
drawing correction or corrected drawings are required in reply to the Office action to avoid
abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3.   Claims 1, 10 and 16 are objected to because of the following informalities: The word
"token" in the last line of each claim should be replaced with --tokens--. Appropriate correction
is required. The claims have been interpreted assuming this correction to be made.

4.   Claim 10 is objected to because of the following informalities: The phrase "said line of"
in line 6 on page 18 should be replaced with --said line of data--. Appropriate correction is
required. The claim has been interpreted assuming this correction to be made.

5.   Claim 16 is objected to because of the following informalities: The phrase "said line of"
in line 2 on page 20 should be replaced with --said line of data--. Appropriate correction is
required. The claim has been interpreted assuming this correction to be made.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the
basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7.   Claims 1-4, 10-13 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by

U.S. Pat. No. 5,946,488 to Tanguay et al. (hereinafter Tanguay).

With respect to claim 1, Tanguay discloses a method comprising:

(a) reading a line of data from a file containing source code written in a high level language (see Fig. 3, item 306, and column 5, lines 9-13, which shows reading lines from a source file; see also column 4, lines 65-67, and column 5, line 1, which shows that the source code is written in a high level language);

(b) generating a stream of tokens from said line of data (see Fig. 3, item 308, and column 5, lines 14-16, which shows translating the source code into a stream of tokens), said stream of tokens representing any of a specific type of macro in said line of data as being expanded while other types of macros are not expanded (see Fig. 2, item 200, which shows a selective preprocessor for performing macro expansion; see also column 1, lines 61-66, which shows that specific macros can be selected for expansion, for example, based on the type of the macro);

(c) parsing said stream of tokens (see Fig. 3, item 310, and column 5, lines 17-18, which shows parsing the stream of tokens to execute preprocessing directives and expand macros);

(d) inserting commands representing operations to be performed by a macro into said stream of tokens if a macro is present (see Fig. 3, item 310, and column 5, lines 17-18, which shows expanding macros; see also column 5, lines 61-62, which shows that macro expansion comprises inserting the macro definition into the source code).

(e) writing said stream of tokens to an output file (see Fig. 3, item 312, and column 5, lines 19-21, which shows inserting annotations into the stream of tokens and writing to a file).

With respect to claim 2, Tanguay further discloses the limitation wherein said generating a stream of tokens further comprises:

(a) determining whether tokens are present in either an input file, a look-ahead buffer, or a macro expansion list (see column 8, lines 61-63, which shows reading new tokens from a source file; see also column 9, lines 13-21, which shows a string table serving as a look-ahead buffer; see also column 9, lines 28-34, which shows a representation comprising macro expansion operators, i.e. a macro expansion list); and

(b) responsive to finding tokens, reading said tokens first from said look-ahead buffer, then from said macro expansion list, then from said input file (see column 9, lines 13-21, which shows that tokens are first identified from the string table serving as a look-ahead buffer; see also column 9, lines 39-45, which shows that the string table then identifies tokens in macro expansions; see also column 8, lines 61-63, which shows that new tokens, i.e. tokens not yet identified, are read from the source file);

(c) presenting said tokens to a parser so that any macro in said line of data appears to have been expanded (see column 9, lines 53-59, which shows presenting the tokens, including the expanded code, to either a viewer or a compiler, i.e. a parser).

With respect to claim 3, Tanguay further discloses the limitation wherein said parsing further comprises:

(a) determining a type of token read (see column 8, lines 61-67, which shows reading tokens and determining the type);

(b) responsive to determining that the token is an end-of-line, processing an input line of tokens (see column 8, lines 61-67, which shows identifying syntax elements such as end-of-line tokens, for example; see also column 5, lines 12-16, which shows that tokens are processed in terms of input lines);

(c) responsive to determining that the token is not a symbol, adding the token to a current line token list (see column 9, lines 7-12, which shows adding tokens to a table or list; see also column 11, lines 10-16, which shows a line database for storing information related to lines comprised of tokens);

(d) responsive to determining that the token is a symbol that indicates a beginning of a macro definition, recording the macro name and macro definition and adding the tokens to a look-ahead buffer (see column 9, lines 28-34, which shows identifying the beginning of a macro expansion or definition; see also column 9, lines 13-21, which shows adding tokens to a string table serving as a look-ahead buffer; see also column 11, lines 33-36, which shows a macro database having records comprising macro references and expansions, i.e. macro names and definitions); and

(e) responsive to determining that the token is a symbol that does not indicate a beginning of a macro definition, adding the token to a current line token list (see column 9, lines 7-12, which shows adding tokens to a table or list; see also column 11, lines 10-16, which shows a line database for storing information related to lines comprised of tokens).

With respect to claim 4, Tanguay further discloses the limitation wherein said writing comprises:

(a) writing expanded macro tokens to said output file if said macro is of said specific type of macro (see column 4, lines 35-47, which shows writing expanded code, i.e. code including expanded macro tokens, to an output file; see also column 4, lines 52-54, which shows selective expansion based on user input, for example, according to the type of macro); and

(b) writing an original macro call to said output file if said macro is not said specific type of macro (see column 4, lines 35-47, which shows writing original code, i.e. code including original macro calls, to an output file; see also column 4, lines 52-54, which shows selective expansion based on user input, for example, according to the type of macro).

With respect to claim 10, Tanguay discloses a system comprising:

(a) a storage device having stored therein one or more routines for selectively expanding macros within source code (see Fig. 1, item 130, which shows a storage device having a selective preprocessor; see also column 1, lines 61-66, which shows selectively expanding macros in source code); and

(b) a processor coupled to the storage device for executing the one or more routines for selectively expanding macros within source code (see Fig. 1, items 170 and 180, which show a processor and a bus) which, when executing said routine:

(i) reads a line of data from a file containing source code written in a high level language (see the explanation for part (a) of claim 1 above);

(ii) generates a stream of tokens from said line of data, said stream of tokens representing any of a specific type of macro in said line of data as being expanded while other types of macros are not expanded (see the explanation for part (b) of claim 1 above);

(iii) parses said stream of tokens (see the explanation for part (c) of claim 1 above);

(iv) inserts commands representing operations to be performed by a macro into said stream of tokens if a macro is present (see the explanation for part (d) of claim 1 above); and

(v) writes said stream of tokens to an output file (see the explanation for part (e) of claim 1 above).

With respect to claim 11, see the explanation for claim 2 above.

With respect to claim 12, see the explanation for claim 3 above.

With respect to claim 13, see the explanation for claim 4 above.

With respect to claim 16, see the explanation for claim 10 above.

With respect to claim 17, see the explanation for claim 2 above.

With respect to claim 18, see the explanation for claim 3 above.

With respect to claim 19, see the explanation for claim 4 above.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 5-9, 14-15 and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Tanguay, as applied to claims 1, 10 and 16 above, respectively, in view of U.S. Pat. No.

5,903,466 to Beausang et al. (hereinafter Beausang).

With respect to claim 5, Tanguay does not disclose the limitation wherein said source

code written in a high level language comprises a hardware description language (HDL) for

representing hardware designs.

Tanguay does show the use of source code written in any language that supports

preprocessing (see column 5, lines 37-42; note that this would include hardware description

languages), in a system for debugging software (see column 2, lines 2-3).

Beausang discloses the limitation above in a system that provides constraint-based or

selective scan insertion for implementing design-for-test within an integrated circuit design (see

the title and abstract; see also column 1, lines 36-45, which shows exemplary hardware

description languages).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to use hardware description languages as taught by Beausang in the system of

Tanguay for the purpose of enabling the debugging or testing of hardware designs.

With respect to claim 6, Tanguay does not disclose the limitation wherein said specific

type of macro comprises a scan macro.

Tanguay does show the expansion of any macro (see column 2, lines 42-44; note that this would include scan macros), in a system for debugging software (see column 2, lines 2-3).

Beausang discloses the limitation above in a system that provides constraint-based or selective scan insertion for implementing design-for-test within an integrated circuit design (see the title and abstract; see also column 5, lines 1-7, which shows the insertion or expansion of scan cells or macros).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use scan macros as taught by Beausang in the system of Tanguay for the purpose of enabling the debugging or testing of hardware designs.

With respect to claim 7, Tanguay discloses a method for debugging software (see column 2, lines 2-3) comprising:

(a) reading source code, the source code including a plurality of macro definitions (see column 8, lines 61-63, which shows reading source code; see column 1, lines 61-66, which shows that the source code includes macro definitions);

(b) creating a token stream based on the source code that includes multifaceted tokens that can be hidden from or made visible to a subsequent parsing process by expanding the plurality of macro definitions and making tokens associated with some macros visible to the subsequent parsing process and marking other tokens as hidden (see column 5, lines 14-16, which shows translating the source code into a stream of tokens; see also column 4, lines 52-62, which shows expanding macro definitions to make them visible and marking the code so that other tokens will be hidden);

(c) performing macro expansion by parsing those of the multifaceted tokens that are visible to the parser and adding appropriate commands (see column 5, lines 17-18, which shows parsing the stream of tokens to execute preprocessing directives and expand macros; see also column 5, lines 61-62, which shows that macro expansion comprises inserting the macro definition into the source code); and

(d) generating an expanded source code file containing expanded versions of the macro definitions which are selected but that omits expanded versions of those that are not selected (see column 4, lines 35-47, which shows a selective preprocessor for generating an expanded source code file having the original code or the original code with expanded macro definitions).

Tanguay does not disclose the limitations wherein:

(a) the source code is a hardware description language (HDL) representation of a hardware design;

(b) some of the macros relate to scan insertion;

(c) scan commands are added to the representation; and

(d) the output file is a scan inserted HDL file.

Beausang discloses the limitations above in a system that provides constraint-based or selective scan insertion for implementing design-for-test within an integrated circuit design (see the title and abstract; see also column 1, lines 36-45, which shows exemplary hardware description languages; see also column 5, lines 1-7, which shows the insertion or expansion of scan cells or macros; see also column 15, lines 21-26, which shows the output of a scannable netlist, i.e. a scan inserted HDL file).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to use the features taught by Beausang in the system of Tanguay for the purpose of

enabling the debugging or testing of hardware designs.

With respect to claim 8, Tanguay does not disclose the limitation wherein said HDL file

comprises a high level language

Tanguay does show the use of a high level language (see column 4, lines 65-67, and

column 5, line 1), in a system for debugging software (see column 2, lines 2-3).

Beausang further discloses the limitation above in a system that provides constraint-based

or selective scan insertion for implementing design-for-test within an integrated circuit design

(see the title and abstract; see also column 1, lines 36-45, which shows high level languages).

It would have been obvious to one of ordinary skill in the art at the time the invention

was made to use an HDL comprising a high level language as taught by Beausang in the system

of Tanguay for the purpose of enabling the debugging or testing of hardware designs.

With respect to claim 9, Tanguay does not disclose the limitation wherein said hardware

design represents an integrated circuit design.

Tanguay does show the use of source code written in any language that supports

preprocessing (see column 5, lines 37-42; note that this would include hardware designs and

integrated circuit designs), in a system for debugging software (see column 2, lines 2-3).

Beausang further discloses the limitation above in a system that provides constraint-based

or selective scan insertion for implementing design-for-test within an integrated circuit design

(see the title and abstract; see also column 1, lines 36-45, which shows hardware description languages for representing integrated circuit designs).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use integrated circuit designs as taught by Beausang in the system of Tanguay for the purpose of enabling the debugging or testing of hardware designs.

With respect to claim 14, see the explanation for claim 5 above.

With respect to claim 15, see the explanation for claim 6 above.

With respect to claim 20, see the explanation for claim 5 above.

With respect to claim 21, see the explanation for claim 6 above.

With respect to claim 22, see the explanation for claim 7 above. Note that Tanguay further discloses a machine-readable medium (see Fig. 1, item 130) and a processor (see Fig. 1, item 170).

With respect to claim 23, see the explanation for claim 8 above.

With respect to claim 24, see the explanation for claim 9 above.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. No. 4,553,205 to Porchia discloses a macro expansion system that conditionally or selectively expands macro definitions.

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael J. Yigdall whose telephone number is (703) 305-0352.

The examiner can normally be reached on Monday through Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the

organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

MY   Michael J. Yigdall
      Examiner
      Art Unit 2122

mjy
January 8, 2004

TUAN DAM
SUPERVISORY PATENT EXAMINER